CLAIMS

1. The use of a variable reflective material (VAREM) in a device (1, 9, 10) for converting solar energy into thermal energy and possibly electric energy, wherein a layer of VAREM material (4) is present between a sunlight-transmitting plate (2, 11) and a carrier plate (5, 7).

2. The use according to claim 1, characterized in that the device comprises a sunlight-transmitting plate (2) and a heat-conducting substrate (5), which is spaced therefrom by some distance, as the carrier plate, in which substrate (5) one or more channels (6) are formed, in which channels (6) a heat transferring medium is present, with the VAREM layer (4) being present between the sunlight-transmitting plate (2) and the substrate (5).

3. The use according to claim 2, characterized in that the VAREM layer (4) abuts against the substrate (5).

4. The use according to claims 2 - 3, characterized in that a layer of photovoltaic units (3) is present between the VAREM layer (4) and the sunlight-transmitting plate (2).

5. The use according to claim 4, characterized in that the layer of photovoltaic units (3) abuts against the VAREM layer (4).

6. The use according to claim 1, characterized in that the device comprises a first sunlight-transmitting plate (2), a second sunlight-transmitting plate (11) and a thermally insulating carrier (7) as the carrier plate, said plates being spaced a respective distance apart, wherein the space (8) formed by the second sunlight-transmitting plate (11) and the thermally insulating carrier (7) is divided into two separate subspaces by a layer of photovoltaic units (3), with a heat-transferring medium being present in each subspace and the VAREM layer (4) being present in the subspace formed by the layer of photovoltaic units (3) and the thermally insulating carrier (7).

7. The use according to claim 6, characterized in that the VAREM layer (4) abuts against the thermally insulating layer (7).

8. The use according to claim 6, characterized in that the VAREM layer (4) abuts against the layer of photovoltaic units (3).

9. The use according to claim 1, characterized in that the device comprises a sunlight-transmitting plate (2) and a thermally insulating carrier (7), which is spaced therefrom by some distance, as the carrier plate, wherein a VAREM layer (4) abutting against the carrier (7) is positioned between said plate (2) and said carrier (7), on which VAREM layer (4) a layer of photovoltaic units (3) is present, with a heat-transferring medium being present in the space between the sunlight-transmitting plate (2) and the layer of photovoltaic units (3).

10. The use according to any one or more of the preceding claims 2 - 9, characterized in that the sunlight-transmitting plate (2, 11) also transmits infrared radiation.

11. The use according to claim 1, characterized in that the VAREM layer (4) is present on a Trombe wall.

12. The use according to any one or more of the preceding claims 1 - 11, characterized in that the VAREM layer (4) is built up of, in succession, a metal alloy, a solid electrolyte and an electrode, which VAREM layer (4) is enveloped by a closed hydrogen atmosphere, wherein the hydrogen concentration of the metal alloy is controlled by applying an electric voltage between the electrode and the metal alloy.

13. The use according to any one or more of the preceding claims 1 - 11, characterized in that the VAREM layer (4) is built up of, in succession, a metal alloy, a solid electrolyte, a storage electrode, a top electrode, and a hydrogen-impermeable layer, wherein the hydrogen concentration of the metal alloy is controlled by applying an electric voltage between the electrode and the metal alloy.

14. The use according to claims 12 - 13, characterized in that said electric voltage is generated by using a photocell.

15. The use according to claims 12 - 13, characterized in that the metal alloy is selected from an alloy of Mg and a transition metal, such as Ni, Co, Fe.

16. The use according to claims 12 - 13, characterized in that the solid electrolyte is selected from the group consisting of $ZrO_2$ and $Y:CaF_2$.

17. The use according to claim 13, characterized in that the storage electrode consists of $WO_3$.

18. The use according to claim 13, characterized in that either $ZrO_2$ or yttrium oxide is used for the hydrogen-impermeable layer.

19. The use according to claim 13, characterized in that the storage electrode and the top electrode form one unit obtained from transition metals such as V, Nb, Ta and Pd.